VITEK

VTC-C770WDR

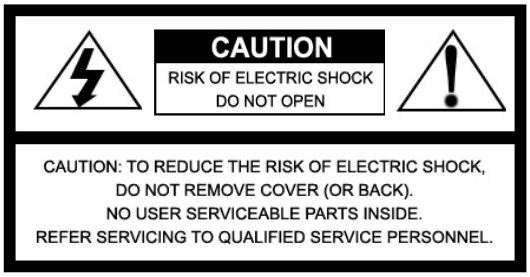
WDR True Day and Night (ICR) Camera

- Pixim D8800C Seawolf Digital Imaging System CMOS
- 700TVL High Resolution
- On Screen Display (OSD) Menu
- 3DNR - Three Dimensional Motion Adaptive Noise Reduction
- UTC CONTROL - Serial Control over Coax
- 0.00008 Lux (F1.2@40IRE using sense-up)
- Supports C/CS mount DC drive lenses
- Supports NTSC & PAL Standards
- 4:3 / 16:9 Ratio Scaled Video Output
- CRT / LCD Selectable Video Output Optimization
- 10 - bit ITU DSP
- 4 Metering Zones for WDR Optimization

WARNING To prevent fire or shock hazard, do not expose the unit to rain or moisture.

The symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

The symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to person.



Caution

To prevent electric shocks and risk of fire hazards, do NOT use other than specific power source.

Warning (NTSC version) -- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Caution -- Any changes or modifications in construction of this device that are not expressly approved by the party responsible for compliance, could void the user's authority to operate the equipment.

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1. Safety Instructions and Notes

- Read instructions carefully before putting the camera into operation.
- Keep the operating instructions in a safe place for later use.
- The Standard Box Camera is designed for indoor use only and it must not be installed where exposed to rain and moisture.
- Do not operate the cameras beyond their specified temperature, humidity or power ratings.
- Never open the case of the camera because there are precision parts inside. An accident may result.
- Do not put anything metallic or foreign through the vent. A fire or electric shock may result.
- Be sure to turn off the power before installing or making connection.
- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks or damage and no moisture can get in.
- Do not install the camera in places exposed to vibrations and shocks.
- Be very careful not to drop or shock the camera while carrying it.
- Do not angle the camera to the sun.
- Do not make any modification to the unit (neither to the software nor the hardware). Improper modification voids the warranty and can cause malfunctions or damages. The manufacturer accepts no liability for damages resulting from unauthorized or improper modifications to the unit.
- Some types of lenses may cause hunting, light amount drop or other problems. In such case, readjust the lenses.
- Because of the digital image device characteristics, images may look rugged at high temperatures. This does not mean the camera is in trouble.
- The warranty becomes void if repairs are attempted by unauthorized persons.
- Contact the supplier if any functional problems arise.

Cleaning:

- Do not touch the surface of the imaging device.
- Keep front and rear lens surfaces clean.

Notice -- The images used in this manual are processed to help comprehension and may differ from actual video of the camera.

2. General Descriptions

VTC-C770WDR (VTC-C770WDR/PAL for PAL)) is a superb wide dynamic range camera which achieves 120dB max (102dB typical) dynamic range of the image by implementing PIXIM's Seawolf digital imaging system.

With Seawolf digital imaging system:

- Delivers high-resolution, crystal clear images that accurately capture every aspect of any scene
- Offers the highest resolution of 700TVL (horizontal)
- Ultra-wide dynamic range imaging accurately captures all of the critical details in a scene including highlights, shadows and everything in between without compromising image quality or color accuracy
- Enhanced low-light performance makes Seawolf the natural choices for both indoor and outdoor cameras for all lighting conditions

With ICR mechanism:

- Enhances its sensitivity about 10x at night time
- Accepts infrared light

With 24VAC/12VDC dual power design:
- Offers flexibility of installation
- Ensures reliability

Main features are;
- Pixim D8800C Seawolf Digital Imaging System CMOS
- 700TVL High Resolution
- On Screen Display (OSD) Menu
- 3DNR - Three Dimensional Motion Adaptive Noise Reduction
- UTC CONTROL - Serial Control over Coax
- 0.00008 Lux (F1.2@40IRE using sense-up)
- Supports C/CS mount DC drive lenses
- Supports NTSC & PAL Standards
- 4:3 / 16:9 Ratio Scaled Video Output
- CRT / LCD Selectable Video Output Optimization
- 10 - bit ITU DSP
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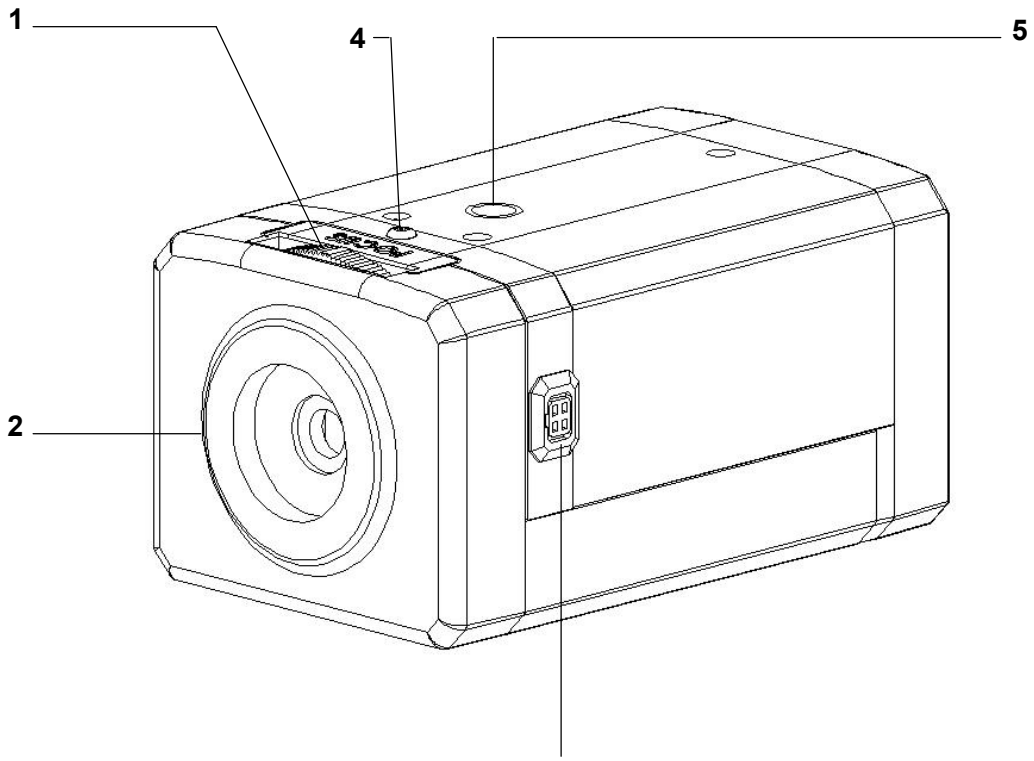
3. Supplied Items

1 x WDR TDN Color Camera
1 x Dust protection cap
1 x Installation and Operating Instructions

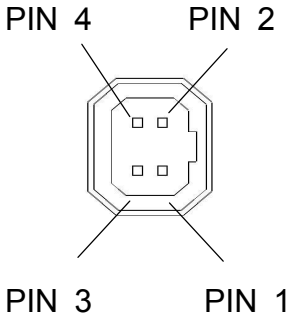
4. Part Names

4.1 Front view



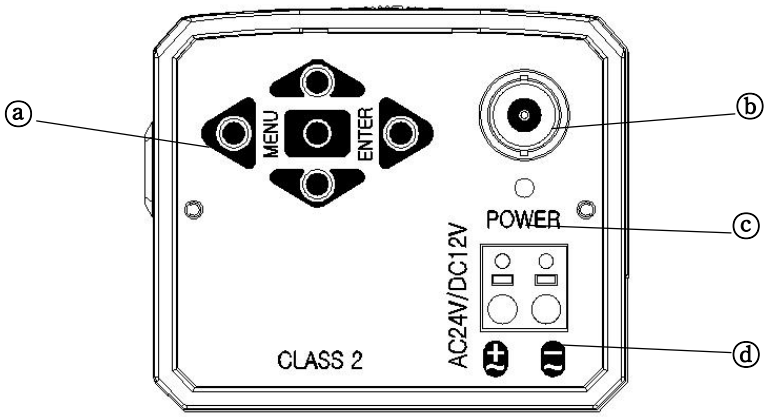
① Back Focus Adjustment ② Dust Protection Cap
③ Lens connector for auto iris lenses ④ Back focus Adjustment Lock Screw
⑤ Camera Mount Hole (Top and Bottom)

- Lens Connector for Auto-iris lens (DC Drive)



PIN No	DC Iris
1	Damp(-)
2	Damp(+)
3	Drive(+)
4	GND

4.2 Rear side view



ⓐ OSD menu switches (Up/ Down/ Left/ Right / Enter)
ⓑ Video Output Connector (BNC)
ⓒ Power indicator LED
ⓓ Power Input Terminal

5. Installation and commissioning Instructions

- Make sure the power is removed before the installation.
- To apply power:
  First connect the low voltage (DC12V or AC24V). Then plug the AC adapter to AC outlets to avoid an improper reset from power jitters and damage from the surge voltage when no load.

5.1. Attaching the lens

- Remove the Dust Protection cap from the lens mount
- Screw the lens onto the camera without using force

5.2. Setting the back focus lock

The back focus is the distance between the lens support on the camera and the image sensor. Optimum focus is only possible when the correct distance is set. It may be necessary to set the back focus in individual cases due to production tolerances of the lens. The iris of the lens must be open as wide as possible. (Smallest F value) to set the back focus. For lenses with automatic iris control, you will require a ND filter (gray filter) to prevent the iris from closing in bright light.

Setting for lenses with a fixed focal distance:
If the focus cannot be set exactly by turning the focus ring (lens), please proceed as follows;

1. Point the camera at an object with sufficient contrast. The distance to the object should be longer than 1,000 x the focal distance.
2. Open the iris on the lens
3. Set the focus of lens so that the distance at the lens is close to infinity but not to exact infinity position.
4. Loosen Back focus Adjustment Lock: Screw one~two turns on the camera with industrial “+” driver

5. Rotate Back Focus Adjustment until the optimum focus is achieved.
6. Tighten Back focus Adjustment Lock Screw again.
7. Trim the focus precisely at lens if necessary.

Setting for lenses with a variable focal distance (zoom):
If the focus changes as the focal distance changes, please proceed as follows.

1. Point the camera at an object with sufficient contrast at a distance of approximately 2 meters
2. Open the iris on the lens
3. Set the maximum focal distance (Tele) at the lens
4. Set the optimum focus with the focus ring
5. Set the smallest focal distance (wide angle)
6. Loosen Back focus Adjustment Lock. Screw one~two turns on the camera with the industrial “+” driver
7. Adjust Back Focus Adjustment until the optimum focus is achieved. Steps 3,4,5 and 7 may need to be repeated several times to obtain the best results
8. Tighten Back focus Adjustment Lock Screw again

5.3. Installation

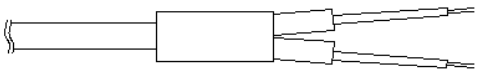
The camera has a 1/4” thread insert on its top and bottom side for mounting the camera to a tripod, wall or ceiling with a corresponding mount.

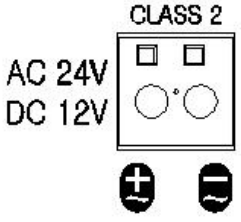
5.4 Commissioning

- First, connect the power supply to the power terminal on the rear panel of camera
- Second, plug the power adaptor to the main supply
- ⓒ Power indicator LED will be lit
- The camera is ready for operation

5.5. Power Supply Connections

The camera can work with either 24VAC or 12VDC, dual voltage power. It does NOT require the polarity-matched connection for 12VDC supply. Primary and secondary grounds are completely isolated to avoid the possible ground-loop problems. Its wide operating voltage range of 10.5V-30V for DC and 12-28.8V for AC gives extra flexibility at the installation.





6. Start up

When the camera is powered properly, it starts up by initializing the internal parameters and the filter switch mechanism. The filter switch unit repeats IN and OUT at each power up and just after RESTORE FACTORY SETTINGS.

7. SETUP

7.1 In the menu

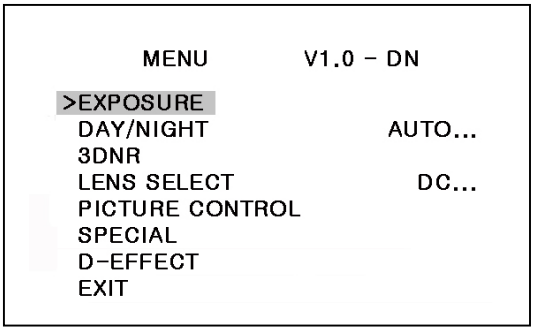
Use , buttons to move the menu, , buttons to change the settings and press button to select or enter.
button stands for MENU or ENTER button.

7.2 Entering menu

Press button longer for than 2 seconds on the back of the camera.

7.3 MAIN

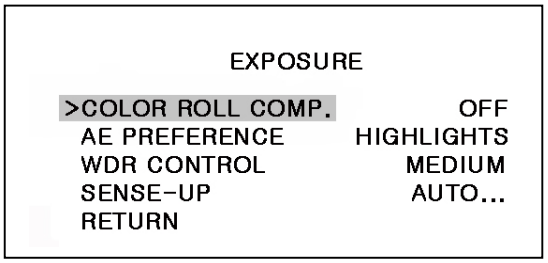
Follow the chart below for submenu settings



MENU	Default	Descriptions
EXPOSURE		Sets COLOR ROLL COMP., AE PREFERENCE, WDR CONTROL and SENSE-UP.
DAY/NIGHT	AUTO	Sets OFF, AUTO or NIGHT **OFF** – Day/Night is disabled and camera works as a normal color camera. **AUTO** – Camera switches DAY from/to NIGHT automatically. N->D THRES, N<->D DELAY, BURST ON B/W can be set. See DAY&NIGHT AUTO SETUP for detail. **NIGHT** – Forced to remove IR cut filter and switch to B/W.
3D NR		Sets DEPTH of 3D NR.
LENS SELELT	DC	Selects the lens type, DC or MANUAL. **In sub-menu, Accurate Focus can be set by function of FOCUS ADJ…**
PICTURE CONTROL		Sets WHITE BALANCE, COLOR SELECT, SHARPNESS, SATURATION, GAMMA.
SPECIAL		Sets MOTION, PRIVACY MASK, SYNC, LANGUAGE, VIDEO STANDARD, RS485 CONTROL.
D-EFFECT		Sets FREEZE, FLIP or D-PTZ.
EXIT		Choose EXIT, SAVE AND EXIT or FACTORY SET.

7.4 EXPOSURE

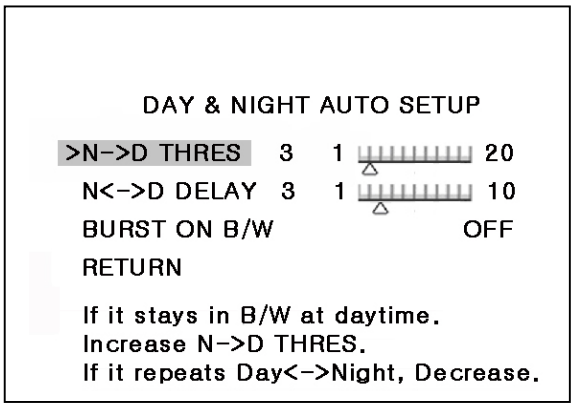
To enter EXPOSURE menu, press ⏺ button at MAIN>EXPOSURE.



EXPOSURE	Default	Descriptions
COLOR ROLL COMP.	OFF	In NTSC system, the entire color tone on the monitor may continuously show reddish and greenish. **COLOR ROLL COMP**. - Reduces the color rolling under the fluorescent lighting. (NTSC system only) OFF – Does not compensate the color rolling. **MODE-M** - Compensates the color rolling when a manual lens is used. **MODE-A** - Compensates the color rolling when an auto iris lens is used.
AE PREFRENCE	HIGHLIGHTS	Sets HIGHLIGHTS or SHADOWS **HIGHLIGHTS** - Provides the best detail in the brighter areas. The darker parts of the scene may under-expose. **SHADOWS** - Provides the best detail in the darker areas. It will reduce the dynamic range and the brighter parts may overexpose.
WDR CONTROL	MEDIUM	**LOW** - Produces an image that has better contrast but less dynamic range and is suitable for indoor or low-contrast outdoor scenes. **NORMAL** - Produces an image that has average contrast and is suitable for indoor or low-contrast outdoor scenes. **MEDIUM** - Produces an image that has better dynamic range and is suitable for a lobby or high-contrast outdoor scenes. **HIGH** - Produces an image that has best dynamic range but less contrast and is suitable for high-contrast outdoor scenes. **CUSTOM** - Provides more flexible compensation by ZONE, RANGE and BIAS. **When COLOR ROLLCOMP. is set to MODE-A, WDR CONTROL will be fixed as LOW.
SENSE-UP	AUTO	If SENSE-UP is set to AUTO, the maximum sense-up rate can be limited to 2X-30FPS, 4X15FPS, 8X-18FPS, 16X-4FPS, 32X-2FPS or 64X-2FPS in SENSE-UP SETUP. **The integration frames vary automatically within the max. rate according to the light level when light becomes low and DSS is operating.** The higher sense-up rate, the higher sensitivity but the slower refresh rate. Some white dots may appear by sense-up due to the image sensor's long accumulation by a long shutter period.

7.5 DAY/NIGHT

To enter EXPOSURE menu, press button at MAIN>DAY/NIGHT>AUTO...



IMPORTANT!!!

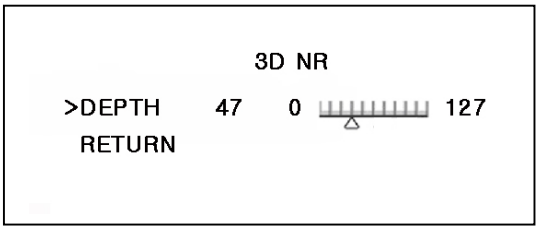
IMPORTANT!!!

DAY->NIGHT and NIGHT->DAY operations must be examined and verified at the final step of the installation.
Block the lens for a few seconds for NIGHT mode and release and let it return to DAY mode. If camera stays at NIGHT mode more than 10 seconds, increase N-->D THRES a little and repeat the fore-mentioned steps. If the scene is too dim or lens iris was adjusted too low (near close), it may not return to DAY.

DAY/NIGHT	Default	Descriptions
N-->D THRES.	3	N-->D THRES is a threshold level to switch from NIGHT to DAY. Due to the nature of WDR the image level of the scene is controlled down and the camera will not switch to DAY despite bright ambience. Increase the value if it stays in B/W and is required to switch to DAY. Too high of a value may make ICR repeat between NIGHT<-->DAY. In that case, slightly reduce the value and try all of the above.
N<-->D DELAY	3	N<-->D DELAY is time in seconds while the camera maintains its status before D<-->N switches. DELAY can avoid the unwanted/frivolous switching by a short term light. (I.e. the light from the passing car)
BURST ON B/W	OFF	BURST ON B/W determines whether a color burst signal keeps output or eliminated when camera switches to B/W. If set to ON, B/W video signal contains color burst signal and is more compatible with the color equipment but shows the same resolution as color video. If set to OFF, the color burst signal is removed from B/W video and shows better resolution. Rarely a compatibility problem may occur with the color equipment.

7.6 3D NR

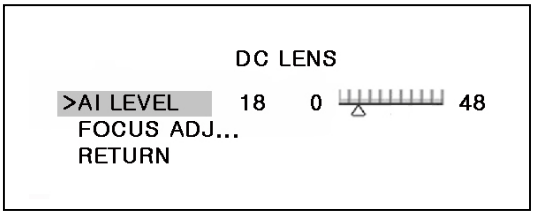
To enter EXPOSURE menu, press ⊙ button at MAIN>3D NR

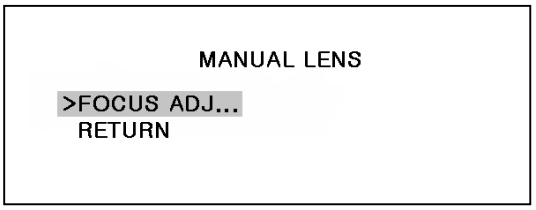


3D NR	Default	Descriptions
DEPTH	47	Determines the depth of Three Dimensional Noise Reduction. High value effectively reduces the noise but a comet effect may occur for a fast moving object and vice versa.

7.7 DC LENS or MANUAL LENS

To enter EXPOSURE menu, press ⊙ button at MAIN>LENS SELECT>DC... or MANUAL...

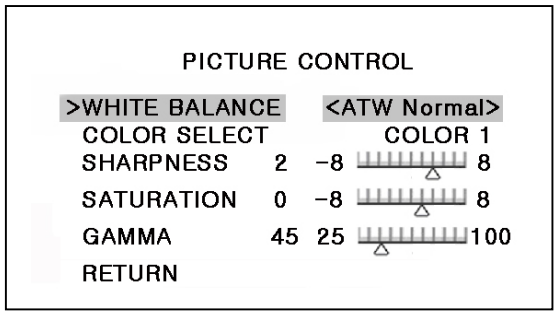




DC/ MANUAL	Default	Descriptions
AI LEVEL	-24	Lower value opens the lens iris and increases the brightness and vice versa. **Too high of a value reduces the amount of incoming light and may result in the camera not returning to DAY from NIGHT.**
FOCUS ADJ...	-	**FOCUS ADJUST helps accurately adjust the focus, regardless of DAY or NIGHT.** Sometimes the focus looks fine tuned at day time but out of focus at night time. This function can eliminate the wrong adjustment of focus.

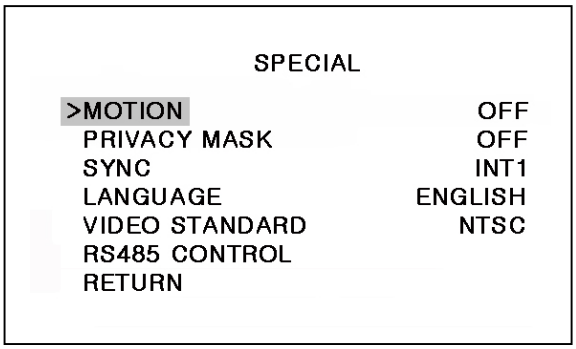
7.8 PICTURE CONTROL

To enter the EXPOSURE menu, press ⊙ button at MAIN>PICTURE CONTROL.



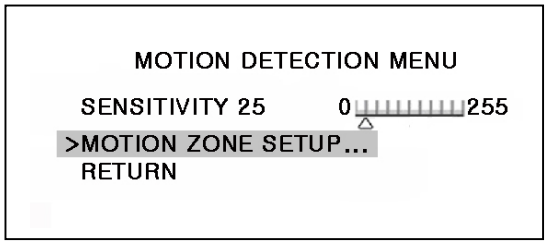
PICTURE CONTROL	Factory Default	Descriptions
WHITE BALANCE	ATW NORMAL	Sets ATW Normal, ATW Desat, ATW Xtnd or MANUAL. **ATW NORMAL** - Compensates automatically in range of 2800K-7500K. **ATW DESAT** - Compensates automatically in range of 2000K-11000K. In the range of 2000-2800K and 7500-11000K, white balance is gradually compensated. **ATW** Xtnd - Compensates automatically in range of 2000K-11000K. **MANUAL** - White balance can be adjusted by either KELVIN or R/B
COLOR SELECT	COLOR1	Provides three color tones.
SHARPNESS	2	Increase or decrease the sharpness of the picture. Too much sharpness can make image harsh and show more noise as well as line flicker at the edge of the object in the picture.
SATURATION	1	High value makes color rich and vice versa.
GAMMA	45	Lower value improves the gain of the dark area but the image has less contrast. Higher value reduces the gain of the dark area and makes the image more dark and contrastive. The image will lose the linearity with too high of a value.

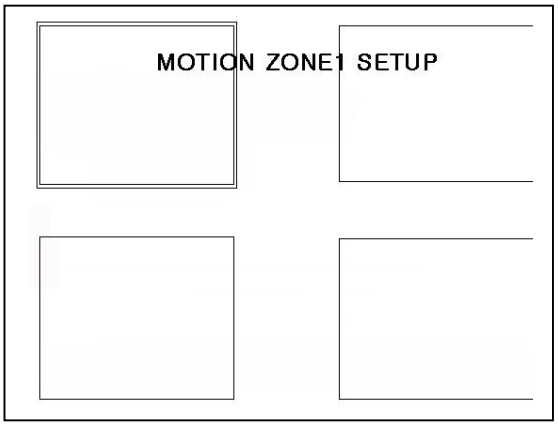
7.9 SPECIAL

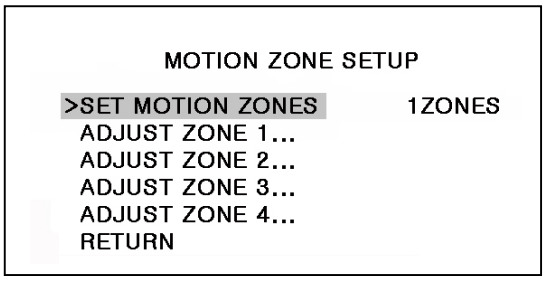


SPECIAL	Default	Descriptions
MOTION	OFF	If it is set to ON and motion is detected, MOTION message will appear on the monitor. See '7.9.1 MOTION ' for settings.
PRIVACY MASK	OFF	If set to ON, it is available up to 6 privacy masks. See '7.9.2 PRIVACY menu' for settings.
SYNC	INT1	Sync is fixed to INT1.
LANGUAGE	ENGLISH	English is available only.
VIDEO STANDARD	NTSC	Able to switch NTSC or PAL.
RS485 CONTROL		Sets the communication parameters of RS-485 for the remote control.

7.9.1 MOTION

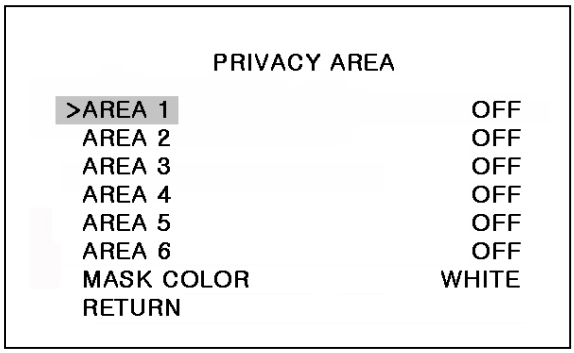






Up to 4 motion areas and the sensitivity can be set. The sensitivity is applied for all zones equally.
When adjusting each zone, the zone border line changes color when pressing ◙ button. Green enables enlarging, red enables reducing and white enables moving the zone with ▲, ▼, ◀, ▶ buttons.
To exit MOTION ZONE SETUP, press ◙ button for 2 seconds.

7.9.2 PRIVACY AREA



Up to 6 privacy areas can be programmed in size, position and mask color.
Use joystick to change size, position and mask color.

Right after pressing button at ON, the 1st zone appears on top-left corner in orange.
The orange colored zone can be relocated in its location with buttons.

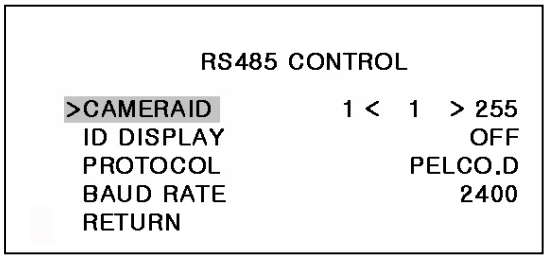
Image after pressing button again. (1st zone changes to blue)
Blue colored zone can be resized with buttons.

An example of the mask when resizing with buttons

An example of mask when relocating.

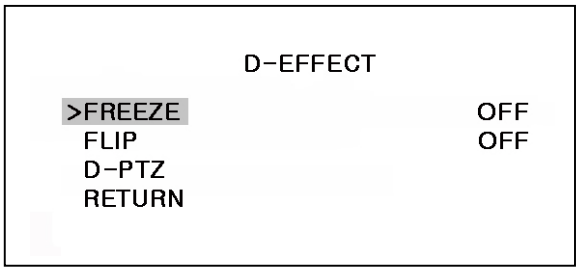
Press button longer than 2 seconds to return to the previous menu.

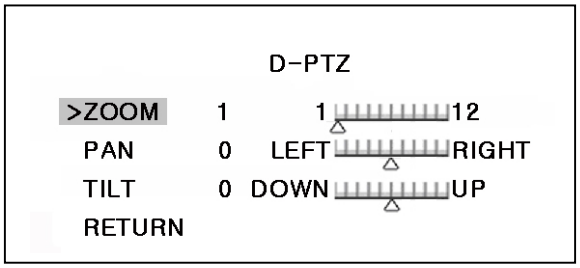
7.9.3 RS485 CONTROL



RS485 CONTROL	Default	Description
CAMERA ID	1	Determines the camera's identification (between 1 and 255)
ID DISPLAY	OFF	Displays camera title on top-left corner of the screen.
PROTOCOL	VITEK	VITEK is available only.
BAUD RATE	2400	Select 2400/4800/9600/19200 bps.

7.10 D-EFFECT





D-EFFECT	Default	Description
FREEZE	OFF	Image freezes and shows the still image at the moment when set to ON.
FLIP	OFF	OFF (Normal display), H-FLIP (left & right flipped), V-FLIP (upside down flipped), H/V-FLIP (left & right flipped and upside down flipped.) Direction of joystick control should be flipped if V-flip is flipped to H/V-flip.
D-PTZ		Able to set digital zoom up to x12 and digital PAN/TILT if zoom ratio >1.

D-PTZ	Default	Description
ZOOM	1	Digital zoom can set up to x12 x1 stands for ZOOM OFF.
PAN	0	Digital PAN can be set if ZOOM is set to >1.
TILT	0	Digital TILT can be set if ZOOM is set to >1.

7.16 EXIT

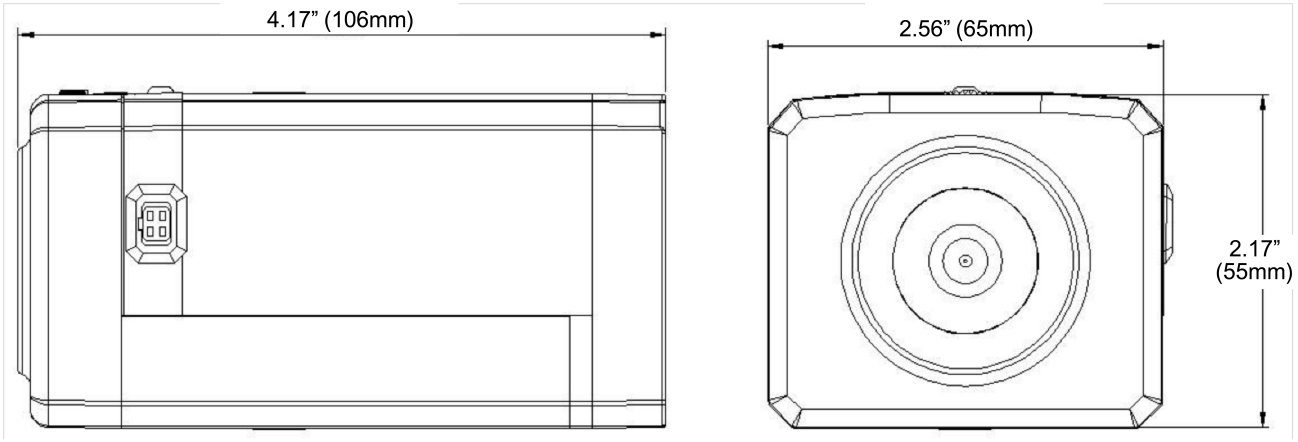
MENU-2	Descriptions
EXIT	Exits menu with discarding any changes.
SAVE AND EXIT	Exits menu after saving the parameters.
FACTORY SET	Restores and saves all parameters of factory settings. Camera resets and restarts automatically.

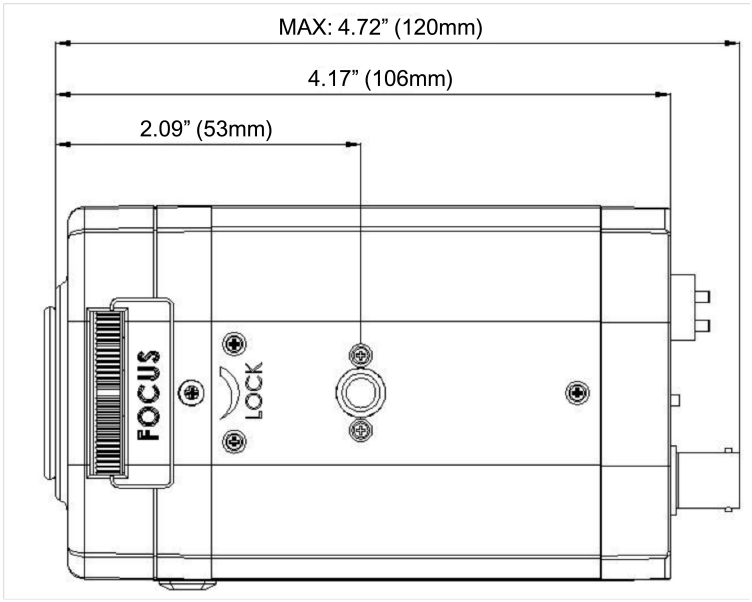
8. Specifications

Model name	**VTC-C770WDR**	**VTC-C770WDR/PAL**
Image Device	Pixim D8800C Seawolf Digital Imaging System CMOS	
Effective Pixels	768(H) x 540(V)	
TV system	NTSC	PAL
Scan frequency.	59.94Hz(V), 15.734Khz(H)	50Hz(V), 15.625Khz(H)
Synchronization	Internal/Line lock (Default: Internal)	
H. Resolution	700TV Lines	
Sensitivity	0.0008Lux at F1.2@40IRE, 32x (DSS+ICR mode)	
S/N Ratio	50dB with AGC OFF at 50IRE	
White Balance	2,000 ~11,000ºK Automatic tracking / AWB / MANUAL	
WDR mode	4 presets [Low / Middle / High / Custom (User Adjustment)]	
Auto Iris Control	DC drive iris control	
SENSE-UP	2X, 4X, 8X, 16X, 32X, 64X ESS	
Motion Detection	On/Off (4 Programmable Zone)	
D-PTZ	Up to X12 digital zoom	
FLIP	OFF / H-FLIP / V-FLIP / H/V-FLIP	
Privacy Zone	On/Off (6 Programmable Zone)	
Auto Iris Control	DC Drive Iris Control	
Flicker reduction	Yes (NTSC Japanese version only)	
OSD	Yes (Setup menu only)	
Video Output	VBS 1Vpp +/-10%, 75ohm	
Lens mount	C/CS (C-mount ring - optional)	
Operating Power	12VDC / 24VAC 3 Watts / 220 mAmp	
Operating condition	-4'F ~ 122'F / -20'C ~ 50'C, 85% RH. Max. Non-condensing	
Dimension (W x H x L,)	2.56 x 2.17 x 4.17 (in) (65 x 55 x 126-mm) ~9.5oz (270g) (Net)	

● Design and specifications are subject to change for product improvements without prior notice.

9. Dimensional Drawings





CHRONO Series

8 & 16 Channel Digital Video Recorders

H.264

Features:

- Highly efficient H.264 compression
- Built-in Data Redundancy
- Real-time recording and real-time playback
- System Setup Wizard and User Friendly GUI
- Multi-Resolution recording
- 4 Spot Output (16 Channel)
- Highly efficient and stable proprietary Database Structure
- Identical GUI for DVR and client viewer
- Built-in Point-of-Sales support
- Web clients & CMS(Central Management Software) Included

IR Lens Series

1/3" DC A/I IR Corrected Lenses

All Vitek Varifocals are manufactured in Japan encompassing the very highest quality glass optics. Their compact design enables ease of installation in small domes and outdoor camera enclosures. Locking screws make it easy to set and maintain focus settings.

VT-EH10PK

Indoor/Outdoor Camera Enclosure & Wall Mount Combo

Features:

- Heavy-Duty Beige Aluminum Construction
- Adjustable Camera Tray & Lockable Rear Latch
- Top Swings Open For Ease In Servicing
- Housing Dimensions: 15.5"L x 5.8"W x 4.3"H (With Visor) / Wall Mount Dimensions: 8.8"L x 2.9"W x 4.5"H
- Heater & Blower Kit Available: B24-H24
- Tamper Resistant Mounting Screws
- Adjustable P/T Head

VITEK LIMITED PRODUCT WARRANTY

VITEK products carry a three (3) year limited warranty. VITEK warrants to the purchaser that products manufactured by VITEK are free of any rightful claim of infringement or the like, and when used in the manner intended, will be free of defects in materials and workmanship for a period of three (3) years, or as otherwise stated above, from the date of purchase by the end user. This warranty is non-transferable and extends only to the original buyer or end user customer of a VITEK Authorized Reseller.

The product must have been used only for its intended purpose, and not been subjected to damage by misuse, willful or accidental damage, caused by excessive voltage or lightning.

The product must not have been tampered with in any way or the guarantee will be considered null and void.

This guarantee does not affect your statutory rights.

Contact your local VITEK Reseller should servicing become necessary.

VITEK makes no warranty or guarantee whatsoever with respect to products sold or purchased through unauthorized sales channels. Warranty support is available only if product is purchased through a VITEK Authorized Reseller.

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